

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1 -24 (cancelled)

Claim 25 (previously presented): A method for laser beam welding with a shielding gas mixture, said mixture comprising helium and nitrogen, wherein the volume proportion of said helium in said mixture comprises about 1% to about 30% for a laser beam power density of about 500 kW/cm² to about 2000 kW/cm².

Claims 26 – 27 (cancelled)

Claim 28 (previously presented): A method of laser beam welding with a shielding gas mixture comprising helium and nitrogen, wherein the volume proportion of said helium in said mixture is a function of the power density such that:

$$28 \times \ln(\Phi_P) - 207 \leq \%He \leq 32.3 \times \ln(\Phi_P) - 207$$

wherein:

- $\ln(\Phi_P)$ represents the natural logarithm of said power density expressed in kW/cm^2 ; and
- %He represents the volume percentage of helium in nitrogen of said gas mixture.

Claim 29 (previously presented): The process of claim 28, wherein said volume proportion of said helium in said mixture is a function of said power density such that:

$$28.5 \times \ln(\Phi_P) - 207 \leq \%He \leq 31.5 \times \ln(\Phi_P) - 207.$$

